



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 10/611,944 | 07/03/2003 | Alexander Beeck | 003-060 | 5421 |

36844 7590 04/26/2004

ADAM J. CERMAK
LAW OFFICE OF ADAM J. CERMAK
P.O. BOX 7518
ALEXANDRIA, VA 22307-7518

EXAMINER

PATEL, VISHAL A

| ART UNIT | PAPER NUMBER |
|----------|--------------|
|----------|--------------|

3676

DATE MAILED: 04/26/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/611,944

Applicant(s)

BEECK ET AL.

Examiner

Vishal Patel

Art Unit

3676

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 July 2003.
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-10 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-10 are rejected under 35 U.S.C. 102(b) as being anticipated by Halling et al (US. 4,854,600).

Regarding claim 1: Halling discloses a gap seal (seal 60) for sealing a gap (gap between 100 and 94) between two adjacent components (components 100 and 94). The two components separated by the gap, each component including a sealing surface (surfaces near 88 and 92). The two sealing surfaces facing each other (surfaces face each other). One of the two components comprising a step (step having surfaces 98 and 96) that projects from one component sealing surface toward the other component sealing surface (the step projects toward the other component sealing surface).

A sealing body (body of the gap seal) comprising a band (band of figure 3) having a cross-section (cross section of the gap seal) bent in such a way to form two contact zone (contact zones that contact near 88 and 92) which abut with a preload against the two sealing surfaces of the components (a preload is applied so to form a seal then a high pressure acts on the seal body) and deflect resiliently when the distance between the sealing surfaces is changed (the components deflect due to the high pressure and the low pressure, the high pressure inside and low pressure out side the components).

Art Unit: 3676

the sealing body having a support zone (support zone having 84-62) formed between the contact zones supported vertically relative to the direction of resilient movement on step.

Regarding claim 2: The gap seal further having two spaces at different pressure (high pressure and low pressure showed in figure 3). The gap connects the two spaces (gap connects high pressure and low pressure) and the sealing body is supported on a side (side 102) of the step that faces the space with higher pressure.

Regarding claim 3: The sealing body has a hollow profile (hollow profile that faces high pressure) including an opening on one side of the sealing body cross section and the opening faces the space with the high pressure (openings between 84-62).

Regarding claim 4: The band comprises a bent spring steel (this is the case since the band acts as a spring metal particularly steel).

Regarding claim 5: The two sealing surfaces of the components lie parallel to each other and the two contact zones are located on a straight line that is vertical to the sealing surfaces (this is the case since the contact zones contact the sealing surfaces).

Regarding claim 6: The band has a C-shape cross-sectional profile (the band has a C-shape cross sectional profile created by 74, 84 and 73).

Regarding claim 7: The profile of the band comprises a U-shape center section (U formed by 69, 70 and 80) and two end sections (end sections contacting near 88 and 92). The end sections are bend outward and rounded (the end section is bend outward and is rounded, near 88 and 92). The end sections comprises the contact zones.

Regarding claim 8: The band further comprises contact bodies including the contact zones (this is the case when seal of figure 5 is used and contact bodies are 133 and 132).

Art Unit: 3676

Regarding claim 9: The step projects from the associated sealing surface a distance so that a bent portion of the sealing body remains in the elastic range when the step, because of a corresponding relative movement of the components, comes to abut against the opposing sealing surface or the opposing component (this is the case because the step portion restrict compression of the seal in a direction).

Regarding claim 10: The components are an element of a turbine or compressor (column 1, lines 17-20) and the element is selected from the group consisting of a guide vane, rotor blade and a heat shield (ducting system of a turbine has heat shield and guide vanes).

Conclusion

3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Kolodziej et al, Taylor, Creavey, Halling, Rahnke et al, Liotta et al, Rode and Aksit et al.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vishal Patel whose telephone number is (703) 308-8495. The examiner can normally be reached on Monday through Friday from 7:30 PM to 4:00 PM (EST).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Anthony Knight, can be reached on (703) 309-3179.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-2168. Technology Center 3600 Customer Service is available at 703-308-1113. General Customer Service numbers are at 800-786-9199 or 703-308-9000. Fax Customer Service is available at 703-872-9325.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks
Washington, D.C. 20231

or faxed to: 703-872-9326, for formal communications for entry before Final action: or,
703-872-9327, for formal communications for entry after Final action.

Art Unit: 3676

Hand-delivered responses should be brought to Crystal Park Five, 2451 Crystal Drive, Arlington, Virginia, Seventh Floor (Receptionist suite adjacent to the elevator lobby).

VP

April 16, 2004

A handwritten signature in black ink, appearing to read "Alison Pickard", written in a cursive style.

ALISON PICKARD
Primary Patent Examiner
Tech. Center 3600